

# ONKYO SERVICE MANUAL


## STEREO CASSETTE TAPE DECK

### MODEL TA-2044

Black and silver models

UDN, UDC, UD	120V AC, 60Hz
UGV, UG	220V AC, 50Hz
UW	120 or 220V AC, 50/60Hz
UQA, UQB	240V AC, 50Hz

#### SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK  ON THE SCHEMATIC DIAGRAM AND IN THE PARTS LIST ARE CRITICAL FOR RISK OF FIRE AND ELECTRIC SHOCK. REPLACE THESE COMPONENTS WITH ONKYO PARTS WHOSE PARTS NUMBERS APPEAR AS SHOWN IN THIS MANUAL.

MAKE LEAKAGE-CURRENT OR RESISTANCE MEASUREMENTS TO DETERMINE THAT EXPOSED PARTS ARE ACCEPTABLY INSULATED FROM THE SUPPLY CIRCUIT BEFORE RETURNING THE APPLIANCE TO THE CUSTOMER.

#### SPECIFICATIONS

Track Format:	4 tracks, 2 channels
Erasing System:	AC erase
Tape Speed:	4.8 cm/sec. (1-7/8 i.p.s.)
Wow & Flutter:	0.04% (WRMS)
Frequency Response:	20–16,000 Hz (30–15,000 Hz $\pm$ 3 dB) (normal position tape) 20–17,000 Hz (30–16,000 Hz $\pm$ 3 dB) (high position tape) 20–19,000 Hz (30–17,000 Hz $\pm$ 3dB) (metal position tape)
Signal-to-Noise Ratio:	60 dB (metal position tape, Dolby NR out). A noise reduction of 10 dB above 5 kHz and 5 dB at 1 kHz is possible with Dolby B NR. A noise reduction of 20 dB at 5 kHz is possible with Dolby C NR.
Input Jacks:	Line IN: 2 Minimum input level: 50mV Input impedance: 50 kohms

**ONKYO**  
AUDIO COMPONENTS

Outputs:	Line OUT: 2
	Std output level: 500mV (0 dB)
	Opt load impedance: over 50 kohms
Headphone Jack: 1	
	Opt load impedance: 8 – 200 ohms
Motors:	DC servo motor: 1 DC motor: 2
Heads:	Rec/pb head: Special Hard Permalloy Erase head: Ferrite
Semiconductors:	TR: 57 Diodes: 36 IC: 9 LED: 10
Power Consumption:	27 watts
Dimensions:	435(W) x 112(H) x 371(D) mm (17-1/8" x 4-3/8" x 14-5/8")
Weight:	6.0 kg. (13.2 lbs.)

Specifications and external appearance are subject to change without notice because of product improvements.

## SERVICE PROCEDURES

### 1. Replacing the lamps

This unit used the lamps listed below.

Circuit No.	Parts No.	Description
PL-902	210149	PL14V 0.06A W3.0
PL-901	210165	PL14V 150mA

Caution; Before replacing the lamps, be sure to unplug the power supply cable.

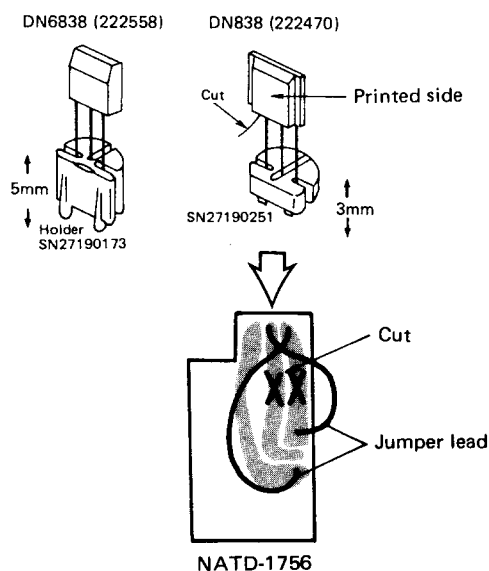
### 2. Instruction resistance measurement

Connect the insulating-resistance tester between the plug of power supply cord and chassis.

Specifications; D model 500 V  $3.3 \pm 0.33 \text{ M}\Omega$   
G/W models 500 V more than 10  $\text{M}\Omega$

### 3. Replacing the Hall ICs

Cautions: As the position of leg of DN6838 and DN838 differ, use the same Hall IC when replacing.



## FEATURES

### Microcomputer Controlled Multi-Program System

A highly efficient microcomputer is used to provide a wide range of programmable functions. The song location function rapidly winds tape directly to the beginning of any particular song on a cassette up to nine songs away from the present location in either direction. A repeat function repeatedly plays a particular song or the section of a cassette between the [000] tape counter point and either the beginning or end of the cassette up to ten times. There's also an automatic music search function that plays about the first eight seconds of each song in the forward or reverse direction.

### Auto Space Rec Mute Button

Press this button while you're making a recording to automatically enter a blank section of tape about five seconds long. Once the blank section has been entered, the TA-2044 will automatically switch to the REC-PAUSE mode. To continue recording, simply press the PLAY button. This function is convenient for temporarily interrupting recording, editing tape during dubbing and inserting unrecorded sections long enough for the automatic continuous song location function to detect.

### Special Hard Permalloy Head Designed for Metal Tapes

The special process used to obtain the extra hard permalloy head surface ensures greater resistance to wear and a better saturation flux density in order to take full advantage of high performance metal tapes. The hyperbolic shape also improves head-to-tape contact.

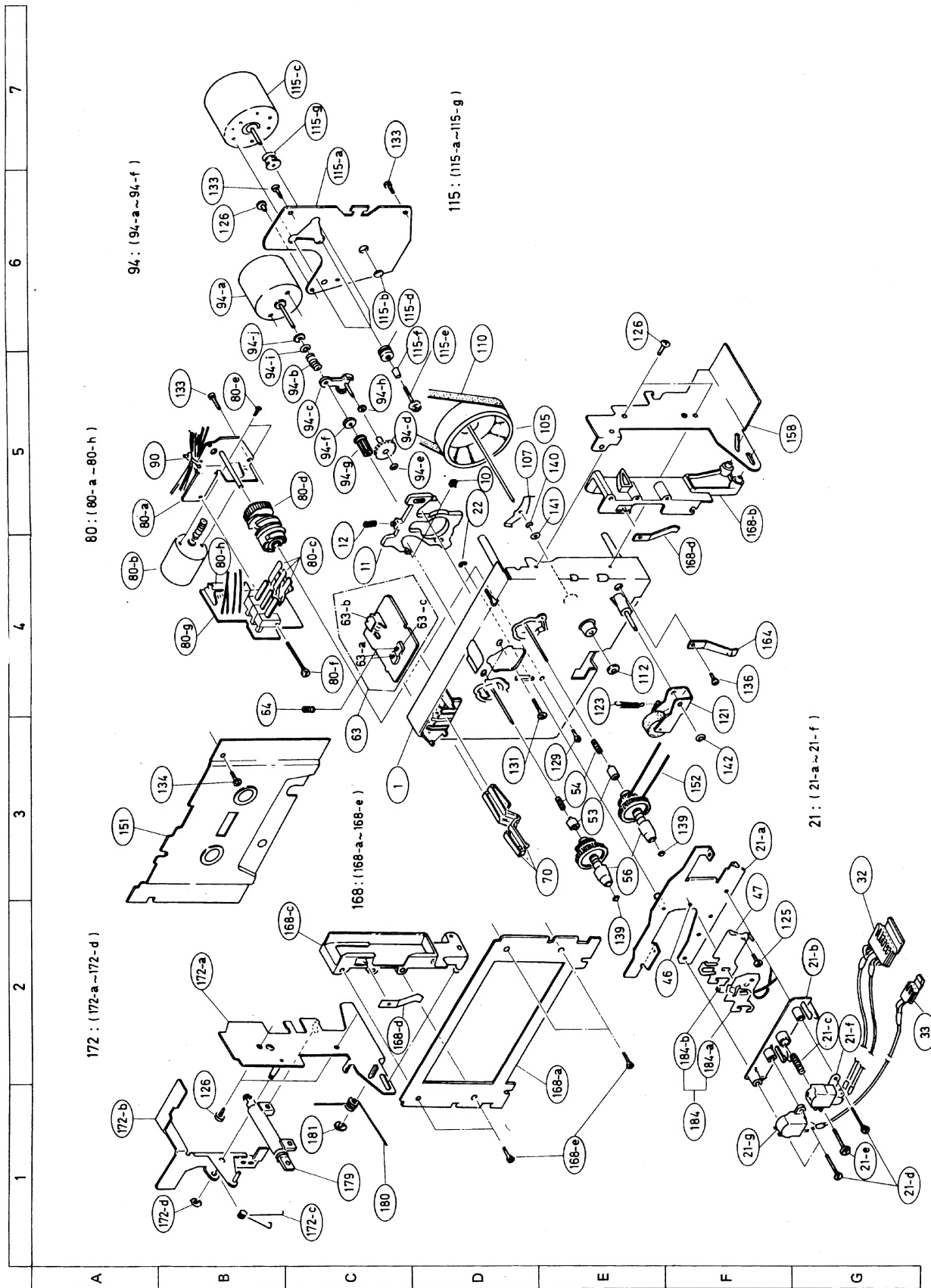
### 2-Motor Tape Transport with Separate Head Assembly Motor

The tape transport system, along with the heads, determines the level of performance of a cassette deck. To guarantee extremely stable and accurate transport the TA-2044 uses a DC servo controlled capstan motor. This motor is frequency or instantaneous changes in load. A highly reliable, simple drive transmission system and precision vertical cassette holder further enhance overall accuracy and stability. As a result, wow and flutter is under 0.04%. In addition, separate DC motors drive the reel tables and head base and the head assembly is constructed to move silently with no annoying clicks.

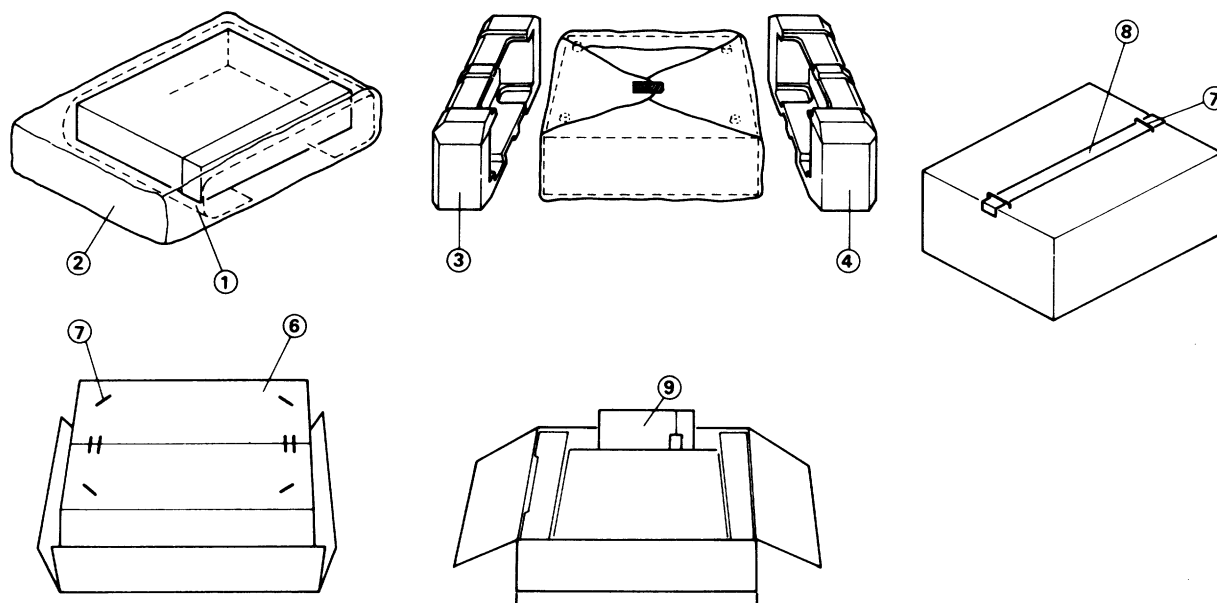
### Dolby B and C Noise Reduction

Along with standard Dolby B NR, the TA-2044 also has the even more effective Dolby C NR system. Dolby C NR reduces tape background noise by 20 dB at 5 kHz, about 3 times more than Dolby B NR. In addition to its wide band noise reduction, Dolby C NR uses a sliding band technique that varies the band width of noise reduction according to the input level, thereby avoiding noise "pumping". Dolby C NR also has an anti-saturation effect to reduce the chance of tape saturation in the high range. All these features combine to eliminate the adverse effects on tape sound that other noise reduction systems can cause.

# TAPE MECHANISM-EXPLODED VIEW



## PACKING VIEW



### D model

REF. NO.	PARTS NO.	DESCRIPTION
1	29095012-1	500x800mm, Protection sheet
2	290311A	620x550mm, Poly bag
3	29090769	Pad, right
4	29090770	Pad, left
6	29050790	Master carton box
7	282301	Sealing hook
8	260012	W-500mm, Damplon type
9	Accessory bag ass'y	
	29340714	Instruction manual
	253074	Connection cable
	29365006-1	Warranty card
	29358002	Service station list
	29100005	220x330mm, Poly bag

### G/W model

REF. NO.	PARTS NO.	DESCRIPTION
1	29095012-1	500x800mm, Protection sheet
2	290311A	620x550mm, Poly bag
3	29090769	Pad, right
4	29090770	Pad, left
6	29050790	Master carton box
7	282301	Sealing hook
8	260012	W-500mm, Damplon tape
9	Accessory bag ass'y	
	29340715	Instruction manual
	253074	Connection cable
	29365005-3	Warranty card (V)
	25055040	CV-K-2, Conversion plug (W)
	29100005	220x330mm, Poly bag

(V): Only West Germany model

(W): Only 120/220V model

# ADJUSTMENT PROCEDURES

## PRECAUTIONS

- Before adjustment, clean the following parts with an alcohol moistened swab.
  - \* record/playback head      \* erase head
  - \* pinch roller                \* capstan
- Do not use magnetized screwdriver for adjustments.
- Demagnetize record/playback head with a head demagnetizer.

## TEST EQUIPMENT/TOOLS REQUIRED:

Audio oscillator  
Digital frequency counter

Oscilloscope

Attenuator

AC voltmeter

Non-magnetic screw driver

Blank tapes (completely erased)

NORMAL ..... NEW UD90  
HIGH ..... NEW XL-II90  
METAL ..... NEW MX60

Test tapes

VTT-658 : 10 KHz, -15dB  
MTT-111 : 3 kHz, -10dB  
MTT-150 : Dolby level calibration  
              400Hz, tone 200nWb/m  
TW-2111 : Torque meter

Item		Connection of instrument	Line input	Test tape	Mode	Output indicator	Adjustment point	Adjust	Remarks
1	Playback torque			TW-2111	PB	TW-2111	R709	35 to 55gcm	
2	Tape speed	Frequency counter to LINE output terminal		MTT-111	PB	Frequency counter	Semi-fixed on the moter	3,000 to 3,010Hz	
3	Head azimuth	AC voltmeter and oscillo-scope to LINE output terminal		VTT-658	PB	AC voltmeter	Head azimuth screws	Maximum and same phase at channels L and R.	See fig. 1 Set the semi-fixed resistors R123 and R124 to center position.
4	Playback level	AC voltmeter to terminals TP-401 and TP-402		MTT-150	PB	AC voltmeter	R123 (Ch. L) R124 (Ch. R)	580mV	
5	Meter			MTT-150	PB	Level meter	R606	0dB indicator light on	
6	Bias current	Fig. 2	1kHz, −20dB and 12kHz, −20dB	NEW XL-II 90	REC/ PB	AC voltmeter	R423 (Ch. L) R424 (Ch. R)	Same level at REC/PB	INPUT VOLUME ..... maximum
7	Record level	Fig. 2	1kHz		REC PAUSE	AC voltmeter	Attenuator or AF OSC output	580mV	INPUT VOLUME ..... maximum
					REC/PB	AC voltmeter	R401, R402	Same level at REC/PB	

FF, REW torque ..... 70 ~ 130gcm

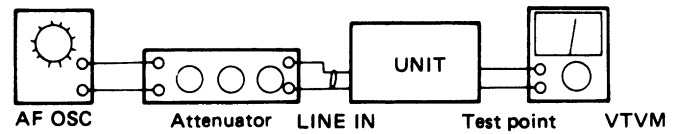
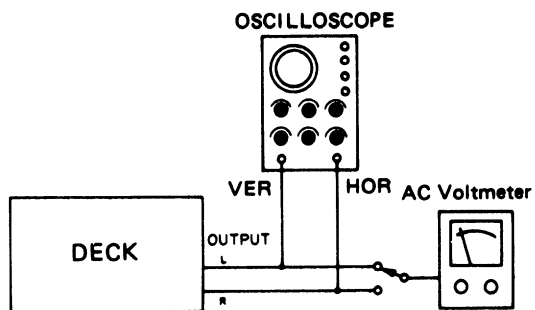
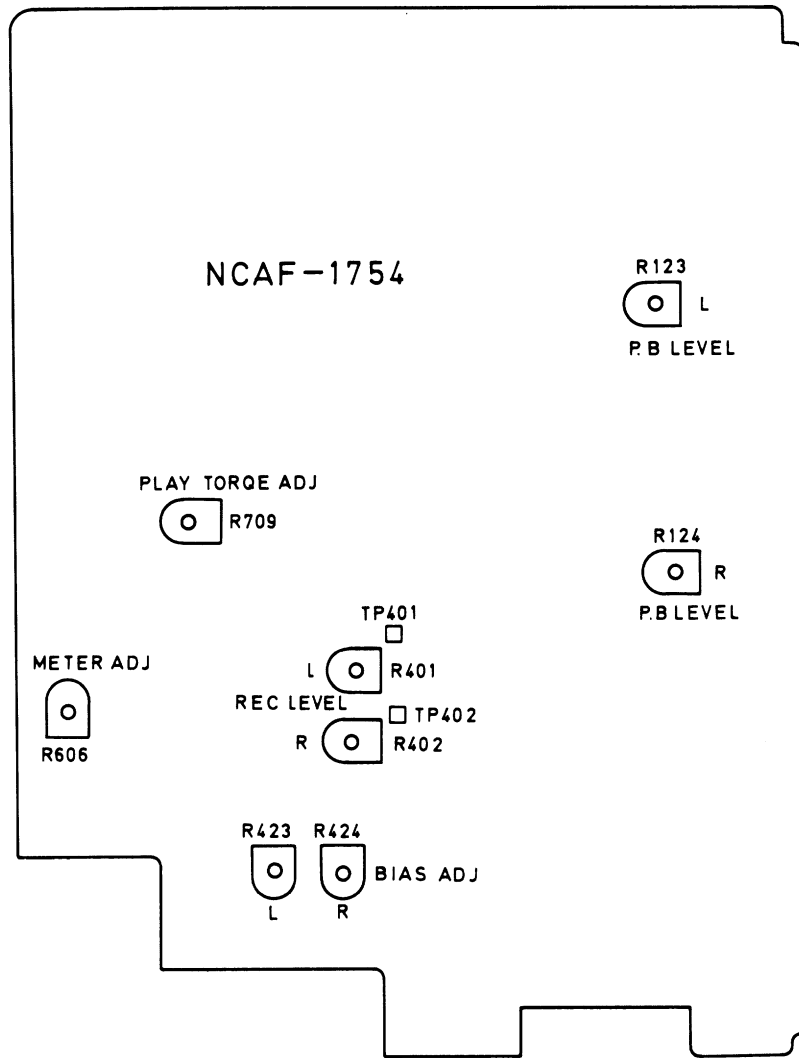


fig-2

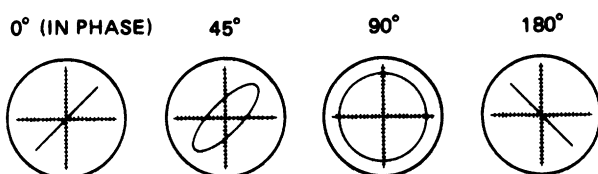
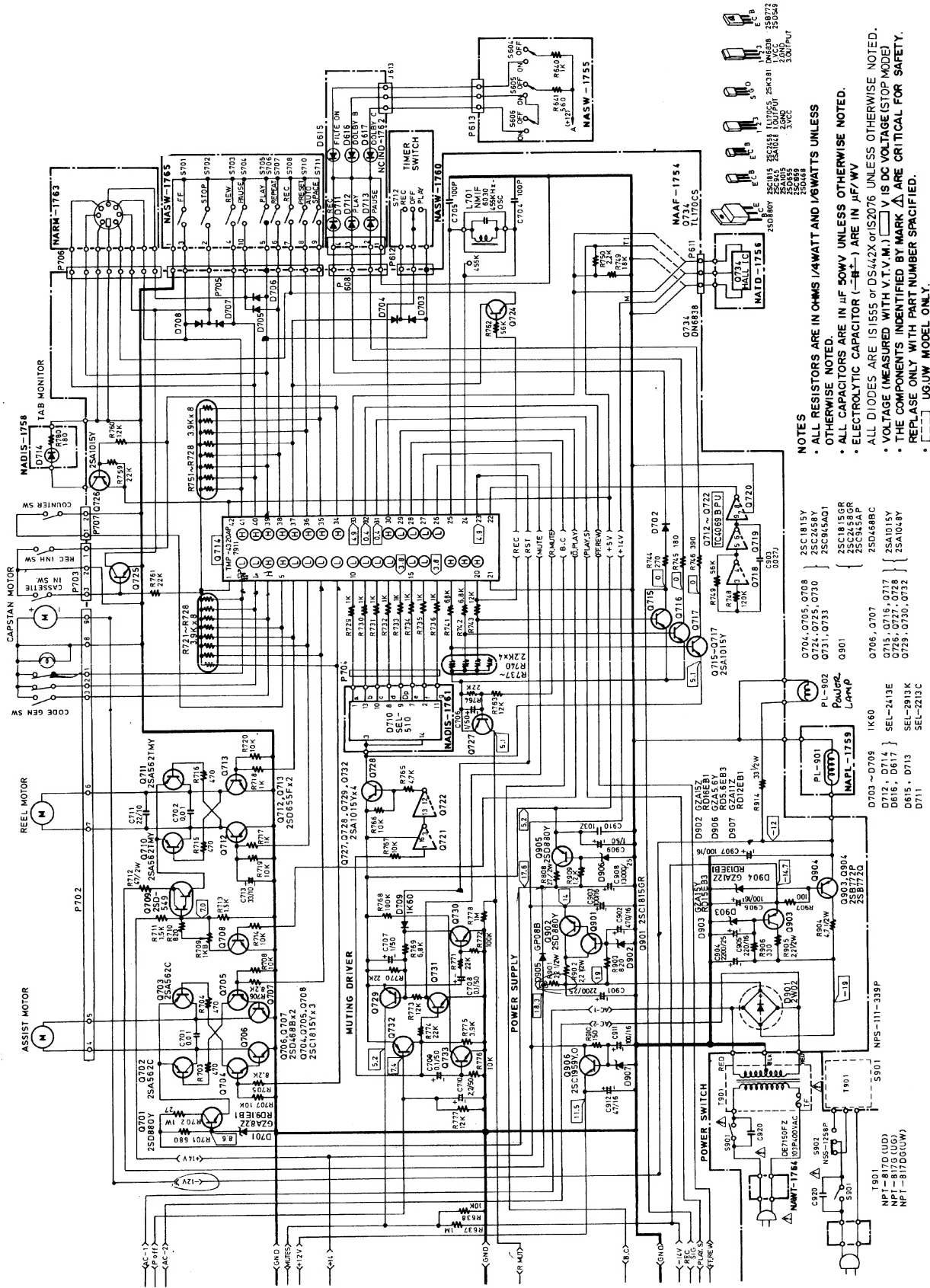


fig. 1 Confirming phase relationship



## SCHEMATIC DIAGRAM



## NOTES

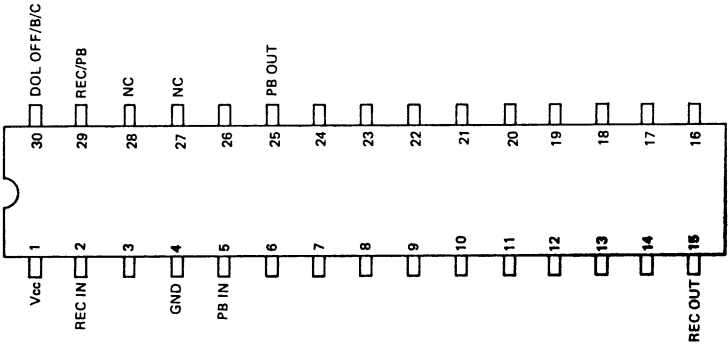
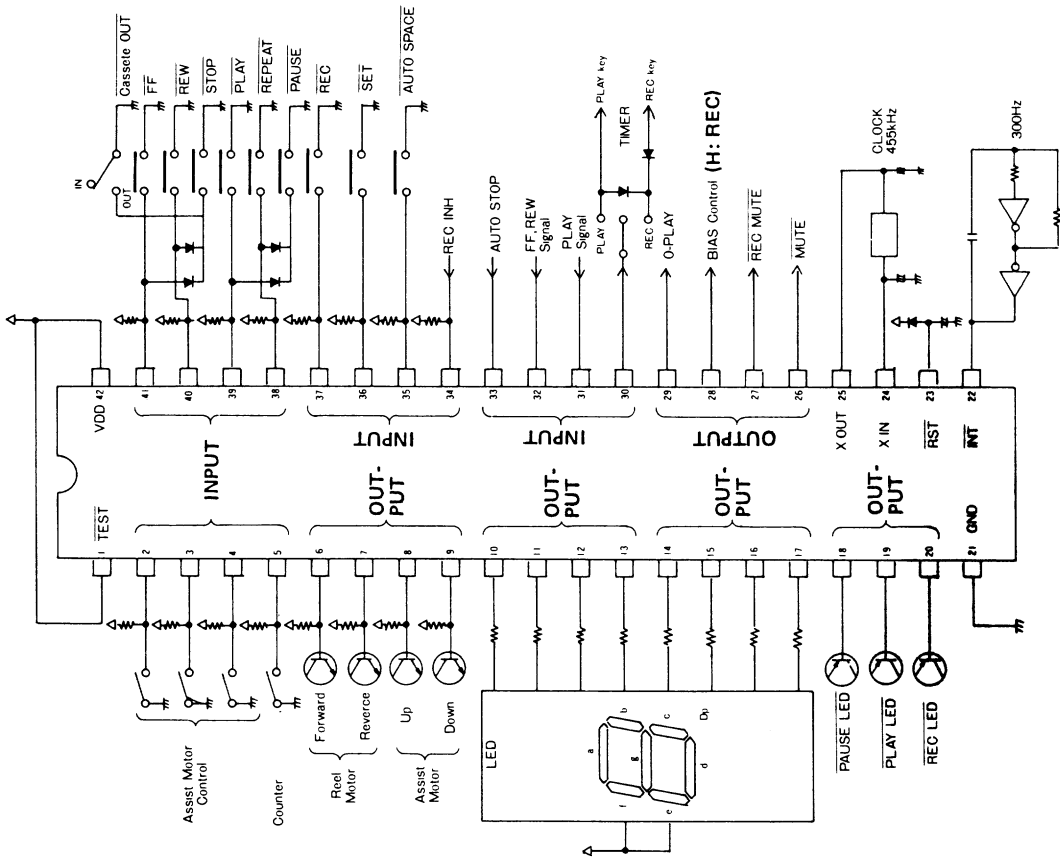
- ALL RESISTORS ARE IN OHMS /4WATT AND /6WATTS UNLESS OTHERWISE NOTED.
- ALL CAPACITORS ARE IN  $\mu$ F 50V UNLESS OTHERWISE NOTED.
- ELECTROLYTIC CAPACITOR (—) ARE IN  $\mu$ F/VV
- ALL DIODES ARE 1S1555 OR DS442X or 1S2076 UNLESS OTHERWISE NOTED.
- VOLTAGE (MEASURED WITH V.T.M.)  $\square$  V IS DC VOLTAGE (STOP MODE)
- THE COMPONENTS IDENTIFIED BY MARK  $\Delta$  ARE CRITICAL FOR SAFETY. REPLACE ONLY WITH PART NUMBER SPECIFIED.
- $\square$  UGUW MODEL ONLY.



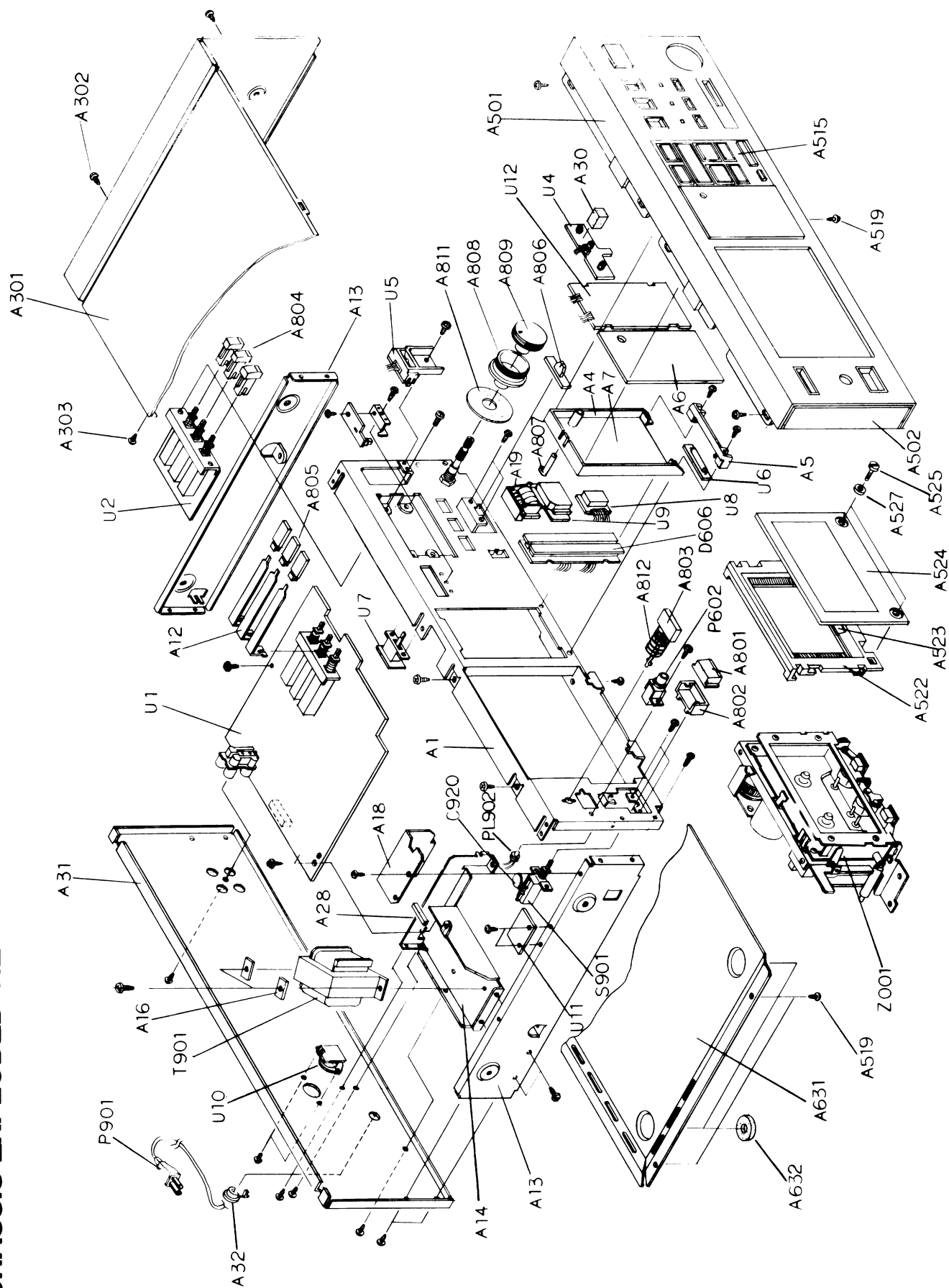


HA12058NT (DOLBY B & C TYPE NOISE REDUCTION SYSTEM)

TMP4320AP (7911) MICROCOMPUTER



## CHASSIS EXPLODED VIEW



CHASSIS EXPLODED VIEW-PARTS LIST

REF. NO.	PARTS NO.	DESCRIPTION	REF. NO.	PARTS NO.	DESCRIPTION	REF. NO.	PARTS NO.	DESCRIPTION
A1	27110193C	Front bracket	A504	27267238A	Guide, eject	C920a	27300601	Cover, capacitor
A2	27140753	Bracket, headphone	A505	272672389	Guide, eject (B)	D606, D607	225129	SEL-8833, LED, level meter
A3	27140811	Bracket, pcb	A506	27267206A	Guide, power	PL902	210149	PL14V0.06AW-3.0, Lamp
A4	27190226	Holder, LED	A507	27267235A	Guide, power (B)	P602	25045132	HKJ-1607-01-020, Stereo
A5	27300532	Holder	A508	27262212	Plate	△ P901		headphone jack
A6	28191203	Clear plate	A509	28191204	Clear plate	AS-UC3, Power supply cable (D)	253099B	
A7	28130196	Dial plate	A510	28191205	Clear plate, tab	AS-CEE, Power supply cable (G/W)	253083-1	
A8	28199095	Film	A511	28191206	Clear plate, tab (B)	P902	2000218	NSAS-12P-122, Socket for meter
A9	834430108	3TTS+10B (BC), Tapping screw	A512	27267240	Guide, push	△ S901	25035375	NPS-111-L399P, Power switch
A10	833430080	3TTP+8P (BC), Tapping screw	A513	27267241	Guide, push (B)	△ S902	25065123	NSS-1258P, Voltage selector switch (W)
A12	27273022	Joint C	A515	28198587	Facet	△ T901	230741-1	NPT-817D, Power transformer (D)
A13	27115139A	Side bracket	A516	28198577	Facet, power	230742-1	230742-1	NPT-817G, Power transformer (G)
A14	27130331D	Bracket, power transformer	A519	27267264	Guide, selector	270743-1	270743-1	NPT-817DG, Power transformer (W)
A15	86414010	FWN4x10FN, Flange nut	A520	27267265	Guide, selector (B)	U1	11128554	NAAF-1754, Rec/pb amplifier pc board ass'y (D)
A16	870065	Washer, power transformer	A522	27267243A	Guide, timer			NAAF-1754a, Rec/pb amplifier pc board ass'y (G/W)
A17	838440109	4TTB+10C (BC), Tapping screw	A523	27267244A	Guide, timer (B)	U2	11128555	NASW-1755, Dolby switvh pc board ass'y
A18	28175074	Insulator plate	A524	27267285	Guide ass'y (B)	U3	11128556	NATD-1756, Hall IC pc board ass'y
A19	24601143	Tape counter	A526	833420068	3TTP+6B (BC), Tapping screw	U4	11128557	NAIND-1757, Tape selector indicator pc board ass'y
A20	834426068	2.6TTS+6B (BC), Tapping screw	A527	838430068	3TTB+8B (BC), Tapping screw	U5	11128558	NADIS-1758, Tab indicator pc board ass'y
A22	834430068	3TTS+6B (BC), Tapping screw	A631	27170150	Bottom board	U6	11128559	NAPL-1759, Lamp pc board ass'y
A23	831430088	3TTB+8B, Tapping screw	A632	27175011C	Leg	U7	11128560	NASW-1760, Timer switch pb board ass'y
A24	834426068	2.6TTS+6B (BC), Tapping screw	A633	838430068	3TTB +6B (BC), Tapping screw	U8	11128561	NADIS-1761, LED pc board ass'y
A25	838130088	3TTB+8B, Tapping screw	A801	28321023	Knob, power	U9	11128562	NAIND-1762, Operation indicator pc board ass'y
A26	82143006	3P+6F (BC), Pan head screw	A802	28321024	Knob, power (B)	U10	11128563	NARM-1763, Remote control terminal pc board ass'y
A27	82142604	2.6P+4F (BC), Pan head screw	A803	28320828C	Knob, eject	U11	11128564	NAWT-1764, Terminal pc board ass'y
A28	28170014	Bushing	A804	28321027	Knob, eject (B)	U12	11128565	NASW-1765, Operation switch pc board ass'y
A29	28199091	Film	A805	28321028	Knob, selector	Z0001	244051	NDM-46, Tape mechanism ass'y
A30	28140492	Cushion	A806	28321148	Knob, selector (B)	NOTES: (D): Only 120V model (G): Only 220V model (W): Only 120/220V model (B): Only back model		
A31	27120524	Back panel (D)	A807	28321073A	Knob, band			
A32	27120525	Back panel (G)	A808	28321074A	Knob, band (B)			
A33	27120526	Back panel (W)	A809	28321035	Knob, timer	NOTE: THE COMPONENTS IDENTIFIED BY MARK △ ARE CRITICAL FOR RISK OF FIRE AND ELECTRIC SHOCK. REPLACE ONLY WITH PARTS NUMBER SPECIFIED.		
A34	270025	SR-3P-4, Strainrelief (D)	A810	28321036	Knob, timer (B)			
A35	801230	3STS+8BQ (BC), Tapping screw	A811	28321218	Knob, counter			
A37	82142604	2.6P+4F (BC), Pan head screw	A812	28321031	Knob R			
A38	28140373	7x30x10mm, Cushion	A813	28321032	Knob R (B)			
A39	27140577	Bracket, DIN (G/W)	A814	28321033	Knob L			
A40	82143006	3P+6F (BC), Pan head screw (G/W)	A815	28321034	Knob L (B)			
A301	28184180	Top cover	A816	28321149	Cushion			
A302	28184181	Top cover (B)	A817	28321073A	Knob, band			
A303	838440089	4TTB+8B (BC), Tapping screw	A818	28321074A	Knob, band (B)			
A304	838430088	3TTB+8B (BC), Tapping screw	A819	28321035	Knob, timer			
A501	28140408	3x10x36mm, Cushion	A820	28321036	Knob, timer (B)			
A502	11128121	Front panel ass'y	A821	28321218	Knob, counter			
A503	11148121	Front panel ass'y (B)	A822	28321031	Knob R			
	28125133	End cap L	A823	28321032	Knob R (B)			
	28125135A	End cap L (B)	A824	28321033	Knob L			
	28125134	End cap R	A825	28321034	Knob L (B)			
	28125135A	End cap L (B)	A826	28140185	Spring			
			A827	27180179	Capacitor IS			
			△ C920	3500065A	DE7150FZ103PAC400V, Capacitor IS			

# TAPE MECHANISM-PARTS LIST

PLACE	REF. NO.	PARTS NO.	DESCRIPTION	PLACE	REF. NO.	PARTS NO.	DESCRIPTION
C3	1	24610960	Chassis	E3	129	801250	2x4mm, Pan head screw
	10	24610376	Brake rubber	D3	131	82512614	2.6x14mm, Pan head screw
C4	11	24610961	Brake plate	B5, B6, C7	133	833426105	2.6x10mm, Tapping screw
C4	12	24605466	Spring	B3	134	833126055	2.6x5mm, Tapping screw
	21	24610962	Head base ass'y	F4	136	837120058	2.6x5mm, Tapping screw
F3	21a	24610966	Head base	E2, F3	139	24610349	1.8x3.2x0.5mm, Washer
G2	21b	24610967	Head stand	E5	140	24610515	2.6x4.7x0.25mm, Washer
G2	21c	24605185	Spring	E5	141	24610972	2.6x7x0.13mm, Washer
G1	21d	82512012	2x12mm, Baining screw	F3	142	24610973	2.7x6x0.5mm, Washer
G1	21e	801198	2x14mm, Flange screw	A3	151	24610959	Cassette panel
G2	21f	24600018	Rec/pb head 24600040	F3	152	24602232	Belt
F1	21g	24600041	Erase head	G5	158	24610939	Bracket R
E3	22	893030	E3, Circlip	F4	164	24605188	Cassette holding spring
G3	32		Connector ass'y		168	24610940	Cassette holder ass'y
G2	33		Connector ass'y	E1	168a	24610949	Bracket
F2	46	24610943	3mm, Steelball	F5	168b	24610849	Holder R
F2	47	24610963	Head holding plate	C2	168c	24610848	Holder L
E3	53	24610964	Spring holder	C2, F4	168d	24605463	Cassette spring
E3	54	24605466	Spring	E1	168e	835426082	2.6x8mm, Flat head tapping screw
E3	56	24602233	Reel stand		172	24610974	Bracket ass'y
C3	63	24606179	Tab/Cassette in detector pc board ass'y	B2	172a	24610975	Bracket L
C4	63a	24606180	Pc board	A1	172b	24610976	Canceller lever ass'y
C4	63b	25055100	Post	C1	172c	24605407	Spring
C4	63c	25035389	Switch	B1	172d	893030	E3, Circlip
	64	24605447	Spring	C1	179	24610942	Damper unit
E3	70	24603274	Switch lever	C1	180	24605456	Spring
	80	24601144	PAD unit ass'y	C1	181	891024	Ring CS
A5	80a	24610968	Chassis	F1	184	24606168	Lamp holder ass'y
A4	80b	24601103	Motor	F2	184a	24610498	Lamp holder
C4	80c	24606182	Leafswitch	F2	184b	24606173	14V, 50mA, Lamp
C5	80d	24602133	Cam gear				
B5	80e	82112003	2x3mm, Pan head screw				
C4	80f	833125209	2.5x20mm, Pan head screw				
B4	80g	24606181	Pc board				
B4	80h	25055106	Post				
A5	90	260208	Binder				
	94	24601145	Reel motor ass'y				
B6	94a	24601054	Reel motor				
B5	94b	24605467	Spring				
C5	94c	24602235	Wheel lever				
C5	94d	24602236	Wheel				
C5	94e	24610969	Washer				
C5	94f	24610970	Felt				
C5	94g	24602237	Motor wheel				
C5	94h	24610981	Washer				
B5	94i	24610374	Washer				
B6	94j	24610373	Spring holder				
E5	105	24602240	Flywheel				
D5	107	24605452	Thrust spring				
D5	110	24602134	Flat belt				
E4	112	23610673	Washer				
	115	24610965	Flywheel plate ass'y				
C6	115a	24610971	Flywheel plate				
C6	115b	24610671	Thrust holder				
B7	115c	24601085	Capstan motor				
C6	115d	24610451	Cushion				
D6	115e	801261	Pan head screw				
C5	115f	24610807	Spacer				
C7	115g	24601107	Motor pulley				
F3	121	24602234	Pinch arm				
E4	123	24605370	Spring				
F2	125	833125069	2.5x8mm, Pan head screw				
B1, B6, E6	126	833125059	2.5x5mm, Pan head screw				

# PRINTED CIRCUIT BOARD PARTS LIST

## REC/PB AMPLIFIER PC BOARD ASS'Y (NAAF-1754)

CIRCUIT NO. PARTS NO. DESCRIPTION

<b>ICs</b>		
Q105, Q106	222729	HA12058NT
Q301, Q302	222652	M5218L
Q403, Q404	222465	NJM4558D
Q501-Q504	222604,	LM324N,
	222681 or	IR3702 or
	222695	LA6324
Q601	222507	TA7612AP
Q714	222682	TMP4320AP-7911
Q718-Q723	222840692	TC4069UBP
<b>Transistors</b>		
Q101-Q104	2212256 or	2SC2458 (LL) or
	2211896	2SC1815 (LL)
Q107, Q108	2212115,	2SC2458 (GR),
	2211255 or	2SC1815 (GR) or
	2210746	2SC945A (P)
Q109, Q110	2212114,	2SC2458 (Y),
Q112, Q115	2211254 or	2SC1815 (Y) or
Q116	2210747	2SC945A (Q1)
Q113, Q114	2211706	2SD655 (F)
Q201, Q202	2212256 or	2SC2458 (LL) or
	2211896	2SC1815 (LL) (G/W)
Q203, Q204	2212303 or	2SK381 (C) or
	2212304	2SK381 (D) (G/W)
Q303, Q304	2212115,	2SC2458 (GR),
Q401, Q402	2211255 or	2SC1815 (GR) or
	2210746	2SC945A (P)
Q505, Q506	2211454 or	2SA1015 (Y) or
Q603, Q605	2212124	2SA1048 (Y)
Q701	2201074	2SD880 (Y)
Q702, Q703	2211563	2SB562 (C)
Q602, Q704	2212114,	2SC2458 (Y),
Q705, Q708	2211254 or	2SC1815 (Y) or
	2210747	2SC945A (Q1)
Q706, Q707	2211682 or	2SD468 (B) or
	2211683	2SC468 (C)
Q709	2201060	2SD549
Q701, Q711	2211554	2SA562TM (Y)
Q712, Q713	2211706	2SD655 (F)
Q715-Q717	2211454 or	2SA1015 (Y) or
	2212124	2SA1048 (Y)
Q724, Q725	2211254,	2SC1815 (Y),
Q730, Q731	2212114 or	2SC2458 (Y) or
Q733	2210747	2SC945A (Q1)
Q726-Q729	2211454 or	2SA1015 (Y) or
Q732	2212124	2SA1048 (Y)
Q901	2211255,	2SC1815 (GR),
	2212115 or	2SC2458 (GR) or
	2210746	2SC945A (P)
Q902, Q905	2201074	2SD880 (Y)
Q903, Q904	2201275 or	2SB772 (Q) or
	2201276	2SB772 (P)
Q906	2211544 or	2SC1959 (Y) or
	2211543	2SC1959 (O)
<b>Diodes</b>		
D101, D101	2240931,	GZA5.1X,
	2240932,	GZA5.1Y,
	2239452 or	RD5.1EB2 or
	2239453	RD5.1EB3
D201, D202	223105,	1S1555,
	223133 or	DS442X or
	223145	1S2076TD (G/W)
D301, D302	223132	1K60
D303-D308	223105,	1S1555,
D502	223133 or	DS442X or
D602-D605	223145	1S2076TD
D608	2241191,	GZA18X,
	2241192,	GZA18Y,
	2239712,	RD18EB2,
	2239713,	RD18EB3,
	224198,	05Z18X,

CIRCUIT NO. PARTS NO. DESCRIPTION

D608	224199,	05Z18Y,
	2242951 or	EQA01-17A or
	2242952	EQA01-17B
D609	2240931 or	GZA5.1X or
	2239452	RD5.1EB2
D610, D611	223105,	1S1555,
D702	223133 or	DS442X or
	223145	1S2076TD
D701	2241033 or	GZA8.2Z or
	2239571	RD9.1EB1
D703-D709	223132	1K60
D901	223868	2WD2
D902	2241152 or	GZA15Z or
	2239691	RD16EB1
D903	2241152 or	GZA15Y or
	2239673	RD15EB3
D904	2241113 or	GZA12Z or
	2239651	RD13EB1
D905	223848	GP08B
D906	2240952,	GZA5.6Y,
	2240953 or	GZA5.6Z or
	2239473	RD5.6EB3
D907	2241093,	GZA11Z,
	2241111,	GZA12X,
	2239631 or	RD12EB1 or
	2239632	RD12EB2
<b>Coils</b>		
L101, L102	233221	NMC-5021
L103, L104	233245	NMC-2029
L401, L402	24606072 or	NCH-1010 or
	231040	NCH-2080
L403, L404	24606069 or	NCH-1007 or
	231039	NCH-2079
L405, L406	24606080 or	NCH-1022 or
	231038	NCH-2078
L407, L408	233247	NCH4054
Z001	<b>Osc. block</b>	NOB-019
	24606134	
L701	<b>Transformer</b>	NMIF-6030
	232100	
<b>Capacitors</b>		
C103, C104	392880337	3.3μF, 50V, LL
C109, C110	352734709	47μF, 10V, Elect.
C111, C112	352741009	10μF, 16V, Elect.
C115, C116	352780109	1μF, 50V, Elect.
C117-C120	352741009	10μF, 16V, Elect.
C123, C124	352732219	220μF, 10V, Elect.
C129, C130	352750479	4.7μF, 25V, Elect.
C133, C134	342783399	0.33μF, 50V, Elect.
C135, C136	352781599	0.15μF, 50V, Elect.
C137, C138	352784799	0.47μF, 50V, Elect.
C139, C140	352786899	0.68μF, 50V, Elect.
C141, C142	352742209	22μF, 16V, Elect.
C143, C144	352741009	10μF, 16V, Elect.
C155, C156	352750479	4.7μF, 25V, Elect.
C157, C158	352781599	0.15μF, 50V, Elect.
C159, C160	352784799	0.47μF, 50V, Elect.
C161, C162	352740479	4.7μF, 16V, Elect.
C201-C204	352780109	1μF, 50V, Elect. (G/W)
C301, C302	352780339	3.3μF, 50V, Elect.
C413, C414	352782299	0.22μF, 50V, Elect.
C415, C416	352761009	10μF, 35V, Elect.
C501	352782299	0.22μF, 50V, Elect.
C502, C503	352780109	1μF, 50V, Elect.
C504	352741009	10μF, 16V, Elect.
C506, C507	352780109	1μF, 50V, Elect.
C508	352741009	10μF, 16V, Elect.
C603	352750479	4.7μF, 25V, Elect.
C604	352742209	22μF, 16V, Elect.
C605	352750479	4.7μF, 25V, Elect.
C606	352741009	10μF, 16V, Elect.
C607	352780109	1μF, 50V, Elect.

CIRCUIT NO.	PARTS NO.	DESCRIPTION
C608	352731019	100 $\mu$ F, 10V, Elect.
C706, C707	352780109	1 $\mu$ F, 50V, Elect.
C708, C709	352781099	0.1 $\mu$ F, 50V, Elect.
C710	352780229	2.2 $\mu$ F, 50V, Elect.
C711	352932206	22 $\mu$ F, 10V, Non-polar Elect.
C713	352743309	33 $\mu$ F, 16V, Elect.
C901, C904	352752229	2,200 $\mu$ F, 25V, Elect.
C902	352744719	470 $\mu$ F, 16V, Elect.
C903	352741019	100 $\mu$ F, 16V, Elect.
C905	352742219	220 $\mu$ F, 16V, Elect.
C906, C907	352741019	100 $\mu$ F, 16V, Elect.
C908	3504168	13,000 $\mu$ F, 25V, Elect.
C909	352780109	1 $\mu$ F, 50V, Elect.
C911	352780109	100 $\mu$ F, 16V, Elect.
C912	352744709	47 $\mu$ F, 16V, Elect.
C913	352742219	220 $\mu$ F, 16V, Elect.
C914, C916	352734709	47 $\mu$ F, 10V, Elect.
<b>Resistors</b>		
R123, R124	5215023 or 5215046	N08HR50KBC, Semi-fixed
R127, R128	5104115	N16RKM50KA35F, Input level adjustment variable
R401, R402	5216045 or 5215021	N08HR10KBC, Semi-fixed
R433, R434	5215047 or 5215024	N08HR100KBC, Semi-fixed
R606	5215045 or 5215021	N08HR10KBC, Semi-fixed
R629	441624714	470ohm, 1W, Metal oxide film
R630	441526814	680ohm, 1/2W, Metal oxide film
R631	441528204	82ohm, 1/2W, Metal oxide film
R642	441526804	68ohm, 1/2W, Metal oxide film
R702	441622704	27ohm, 1W, Metal oxide film
R709	5215042 or 5215018	N08HR1KBC, Semi-fixed
R712	441724704	47ohm, 2W, Metal oxide film
R721-R728	49121392408	3.9kohm $\times$ 8, 1/8W, Network
R737-R740	49121222404	2.2kohm $\times$ 4, 1/8W, Network
R751-R758	49121392408	3.9kohm $\times$ 8, 1/8W, Network
R901, R902	441520224	2.2ohm, 1/2W, Metal oxide film
R904	441520474	4.7ohm, 1/2W, Metal oxide film
R905	441520224	2.2ohm, 1/2W, Metal oxide film
R908	441722704	27ohm, 2W, Metal oxide film
R914	441523304	33ohm, 1/2W, Metal oxide film
<b>Switches</b>		
S601-S603	25035378	NPS-362-L342, push
<b>Relay</b>		
RL601	25065174	NRL-2P1ADC12-09
<b>Terminals</b>		
P601	25045120	NPJ-4PDBL49, Input/output
P604	25050064	NSCT-5P18, DIN (G/W)
<b>Plugs</b>		
P605	25055037	NPLG-6P28, Rec/pb head
P606	25055038	NPLG-2P29, Erase head
P607	25055047	NPLG-12P35, Meter
P704	25055106	NPLG-9P90, Program
P705	25055107	NPLG-10P91, Operation switch
P706	25055104	NPLG-7P88, Remote control
P707	25055099	NPLG-2P83, Tape counter
<b>Sockets</b>		
P608	25050141	NJPS-4P-S, Jumper, Rec/play/pause
P609	2000255	NSAS-8P-193, Dolby switch
P610	2000255	NSAS-8P-193, Tape selector switch
P611	2000254-1	NSAS-6P-192, Hall IC
P612	2000254-1	NSAS-6P-192, Timer
P702	2000252	NSAS-18P-190, Tape mechanism
P703	2000253	NASA-6P-191, Tape mechanism
<b>Radiators</b>		
	27160029	RAD-07

## CIRCUIT NO. PARTS NO. DESCRIPTION

### Screws

82113008 3P+8FN, Pan head

## DOLBY SWITCH PC BOARD ASS'Y (NASW-1755)

CIRCUIT NO.	PARTS NO.	DESCRIPTION
S604-S606	25035379	NPS-322-L343

## HALL IC PC BOARD ASS'Y (NATD-1756)

CIRCUIT NO.	PARTS NO.	DESCRIPTION
Q734	222558 or 222470	DN6838 or DN838, Hall IC

Caution: As the position of leg of BN6838 and DN838 differ, use the same Hall IC when replacing.

27190173 Holder  
27140811 Bracket, pcb

## TAPE SELECTOR INDICATOR PC BOARD ASS'Y (NAIND-1757)

CIRCUIT NO.	PART NO.	DESCRIPTION
D612-D614	225134 27270103	GL-3NG1 Spacer

## TAB INDICATOR PC BOARD ASS'Y (NADIS-1758)

CIRCUIT NO.	PARTS NO.	DESCRIPTION
D714	225137 27190228	SEL-2413E, LED Holder

## LAMP PC BOARD ASS'Y (NAPL-1759)

CIRCUIT NO.	PARTS NO.	DESCRIPTION
PL901	210165	14V, 150mA, Lamp

## TIMER SWITCH PC BOARD ASS'Y (NASW-1760)

CIRCUIT NO.	PARTS NO.	DESCRIPTION
S712	25065224	NSS-2398, Slide switch

## LED PC BOARD ASS'Y (NADIS-1761)

CIRCUIT NO.	PARTS NO.	DESCRIPTION
D710	225130	SEL-510, LED
P708	†000257	NSAS-9P195, Socket

## OPERATION INDICATOR PC BOARD ASS'Y (NAIND-1762)

CIRCUIT NO.	PARTS NO.	DESCRIPTION
D615, D713	225142	SEL-2913K, LED
D616, D617	225137	SEL-2413E, LED
D712		
D711	225141 27190227 24601143	SEL-2213C, LED Holder, selector Tape counter

## REMOTE CONTROL TERMINAL PC BOARD ASS'Y (NARM-1763)

CIRCUIT NO.	PARTS NO.	DESCRIPTION
P701	25050070	NSCT-7P20, DIN terminal
P709	22000256	NSAS-7P194, Socket

## OPERATION SWITCH PC BOARD ASS'Y (NASW-1765)

CIRCUIT NO.	PARTS NO.	DESCRIPTION
S701-S711	25035275	NPS-111-S239, Push switch
P710	2000258	NSAS-10P-196, Socket

NOTE: (G): Only 220V model  
(W): Only 120/220V model